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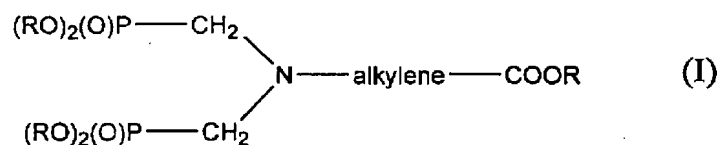
SEP 19 2007

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A process for preparing metal salt nanoparticles in a liquid phase reaction, comprising mixing starting materials of the nanoparticles in a synthesis mixture and growing the nanoparticles from said synthesis mixture during a synthesis period, said process further comprising adding a modifying reagent to the synthesis mixture within the synthesis period, with the modifying reagent exhibiting a first functional group for coupling to one of said nanoparticles and a second functional group for binding to a molecule other than said nanoparticles, wherein the modifying reagent is a pentaalkyl iminobis(methylenephosphono)carboxylate of the formula I:



wherein

R is a C₁-C₄-alkyl radical; and

alkylene is a C₁-C₂₂-alkylene radical or C₇-C₂₀-alkylenearylene radical, which can be linear or branched and can, in addition, carry, as additional substituents, halogen atoms, COOR groups, alkoxy groups, bis(dialkoxyposphorylmethyl)amino groups or aryl radicals.

2. (Previously Presented) The process as claimed in claim 1, wherein the metal salt nanoparticles are substances which are selected from the group consisting of the halides, the

USSN 10/540,168

Page 1

Amendment Under 37 CFR § 1.116 filed September 19, 2007

alkaline earth metal sulfates, the phosphates and halophosphates, the borates, the vanadates, the aluminates, the silicates, the tungstates, the molybdates and the germanates, all of which are undoped or are doped with one or more elements of the lanthanides and/or Mn, Ag, Cu, Pb, Bi, Cr, Sn or Sb.

3. (Previously Presented) The process as claimed in claim 1, wherein the metal salt nanoparticles are substances selected from the group consisting of:

- a) XY_2 ($X = \text{Mg, Ca, Sr, Ba}$; $Y = \text{F, Cl, I}$), $\text{CaF}_2:\text{Eu(II)}$, $\text{BaF}_2:\text{Eu}$, $\text{BaMgF}_4:\text{Eu}$, $\text{LiBaF}_3:\text{Eu}$, $\text{SrF}_2:\text{Eu}$, $\text{SrBaF}_2:\text{Eu}$, $\text{CaBr}_2:\text{Eu-SiO}_2$, $\text{CaCl}_2:\text{Eu}$, $\text{CaCl}_2:\text{Eu-SiO}_2$, $\text{CaCl}_2:\text{Eu,Mn-SiO}_2$, $\text{CaI}_2:\text{Eu}$, $\text{CaI}_2:\text{Eu,Mn}$, $\text{KMgF}_3:\text{Eu}$, $\text{SrF}_2:\text{Eu(II)}$, $\text{BaF}_2:\text{Eu(II)}$, YF_3 , NaYF_4 ,
- b) XSO_4 ($X = \text{Mg, Ca, Sr, Ba}$), $\text{SrSO}_4:\text{Eu}$, $\text{SrSO}_4:\text{Eu,Mn}$, $\text{BaSO}_4:\text{Eu}$, $\text{BaSO}_4:\text{Eu,Mn}$, CaSO_4 , $\text{CaSO}_4:\text{Eu}$, $\text{CaSO}_4:\text{Eu,Mn}$, and also in each case mixed alkaline earth metal sulfates, optionally in combination with magnesium,
- c) $\text{CaPO}_4:\text{Ce,Mn}$, $\text{Ca}_5(\text{PO}_4)_3\text{Cl}:\text{Ce,Mn}$, $\text{Ca}_5(\text{PO}_4)_3\text{F}:\text{Ce,Mn}$, $\text{SrPO}_4:\text{Ce,Mn}$, $\text{Sr}_5(\text{PO}_4)_3\text{Cl}:\text{Ce,Mn}$, $\text{Sr}_5(\text{PO}_4)_3\text{F}:\text{Ce,Mn}$, this also codoped with Eu(II) and Eu,Mn , $\alpha\text{-Ca}_3(\text{PO}_4)_2:\text{Eu}$, $\beta\text{-Ca}_3(\text{PO}_4)_2:\text{Eu,Mn}$, $\text{Ca}_5(\text{PO}_4)_3\text{Cl}:\text{Eu}$, $\text{Sr}_5(\text{PO}_4)_3\text{Cl}:\text{Eu}$, $\text{Ba}_{10}(\text{PO}_4)_6\text{Cl}:\text{Eu}$, $\text{Ba}_{10}(\text{PO}_4)_6\text{Cl}:\text{Eu,Mn}$, $\text{Ca}_2\text{Ba}_2(\text{PO}_4)_3\text{Cl}:\text{Eu}$, $\text{Ca}_5(\text{PO}_4)_3\text{F}:\text{Eu}^{2+}\text{X}^{3+}$, $\text{Sr}_5(\text{PO}_4)_3\text{F}:\text{Eu}^{2+}\text{X}^{3+}$ ($\text{X} = \text{Nd, Er, Ho, Tb}$), $\text{Ba}_5(\text{PO}_4)_3\text{Cl}:\text{Eu}$, $\beta\text{-Ca}_3(\text{PO}_4)_2:\text{Eu}$, $\text{CaB}_2\text{P}_2\text{O}_9:\text{Eu}$, $\text{CaB}_2\text{P}_2\text{O}_9:\text{Eu}$, $\text{Ca}_2\text{P}_2\text{O}_7:\text{Eu}$, $\text{Ca}_2\text{P}_2\text{O}_7:\text{Eu,Mn}$, $\text{Sr}_{10}(\text{PO}_4)_6\text{Cl}_2:\text{Eu}$, (Sr, Ca, Ba, Mg) $_{10}(\text{PO}_4)_6\text{Cl}_2:\text{Eu}$, $\text{LaPO}_4:\text{Ce}$, CePO_4 ,
- d) LaBO_3 , $\text{LaBO}_3:\text{Ce}$, $\text{ScBO}_3:\text{Ce}$, $\text{YAlBO}_3:\text{Ce}$, $\text{YBO}_3:\text{Ce}$, $\text{Ca}_2\text{B}_5\text{O}_9\text{Cl}:\text{Eu}$, $x\text{EuO}_y\text{Na}_2\text{O}_z\text{B}_2\text{O}_3$,
- e) YVO_4 , $\text{YVO}_4:\text{Eu}$, $\text{YVO}_4:\text{Dy}$, $\text{YVO}_4:\text{Sm}$, $\text{YVO}_4:\text{Bi}$, $\text{YVO}_4:\text{Bi,Eu}$, $\text{YVO}_4:\text{Bi,Dy}$, $\text{YVO}_4:\text{Bi,Sm}$, $\text{YVO}_4:\text{Tm}$, $\text{YVO}_4:\text{Bi,Tm}$, GdVO_4 , $\text{GdVO}_4:\text{Eu}$, $\text{GdVO}_4:\text{Dy}$, $\text{GdVO}_4:\text{Sm}$, $\text{GdVO}_4:\text{Bi}$, $\text{GdVO}_4:\text{Bi,Eu}$, $\text{GdVO}_4:\text{Bi,Dy}$, $\text{GdVO}_4:\text{Bi,Sm}$,
- f) $\text{MgAl}_2\text{O}_4:\text{Eu}$, $\text{CaAl}_2\text{O}_4:\text{Eu}$, $\text{SrAl}_2\text{O}_4:\text{Eu}$, $\text{BaAl}_2\text{O}_4:\text{Eu}$, $\text{LaMgAl}_{11}\text{O}_{19}:\text{Eu}$, $\text{BaMgAl}_{10}\text{O}_{17}:\text{Eu}$, $\text{BaMgAl}_{10}\text{O}_{17}:\text{Eu, Mn}$, $\text{CaAl}_{12}\text{O}_{19}:\text{Eu}$, $\text{SrAl}_{12}\text{O}_{19}:\text{Eu}$,

- SrMgAl₁₀O₁₇:Eu; Ba(Al₂O₃)₆:Eu; (Ba,Sr)MgAl₁₀O₁₇:Eu, Mn; CaAl₂O₄:Eu,Nd;
 SrAl₂O₄:Eu, Dy; Sr₄Al₁₄O₂₅:Eu,Dy,
- g) BaSrMgSi₂O₇:Eu; Ba₂MgSiO₇:Eu; BaMg₂Si₂O₇:Eu; CaMgSi₂O₆:Eu;
 SrBaSiO₄:Eu; Sr₂Si₃O₈.SrCl₂:Eu; Ba₅SiO₄Br₆:Eu; Ba₅SiO₄Cl₆:Eu;
 Ca₂MgSi₂O₇:Eu; CaAl₂Si₂O₈:Eu; Ca_{1.5}Sr_{0.5}MgSi₂O₇:Eu; (Ca,Sr)₂MgSi₂O₇:Eu,
 Sr₂LiSiO₄F:Eu,
- h) X₃WO₆ (X = Mg, Ca, Sr, Ba), X₂WO₄ (X = Li, Na, K, Rb, Cs), XMoO₄ (X = Mg,
 Ca, Sr, Ba) and also polymolybdates or polytungstates and/or the salts of the
 corresponding hetero- or isopoly acids,
- i) Zn₂GeO₄,
- j) the following compounds: ALnO₂:Yb, Er (A = Li, Na; Ln = Gd, Y, Lu);
 Ln₂O₃:Yb, Er (Ln = La, Gd, Y, Lu); LnAO₄:Yb, Er (Ln = La, Y; A = P, V, As,
 Nb); Ca₃Al₂Ge₃O₁₂:Er; Gd₂O₂S:Yb, Er; La₂S:Yb,Er,
- all of which are undoped or doped with one or more elements of the lanthanides and/or
 Mn, Ag, Cu, Pb, Bi, Cr, Sn or Sb within host lattice.

4. (Previously Presented) The process as claimed in claim 2, wherein doping
 elements are present in the host lattice at a concentration between 10⁻⁵ mol% and 50 mol%.

5. (Canceled)

6. (Canceled)

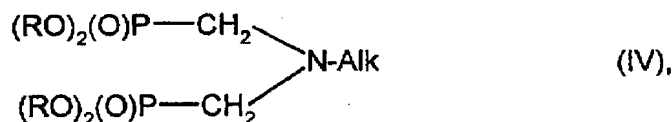
7. (Canceled)

8. (Previously Presented) The process as claimed in claim 1, wherein use is made, as
 modifying reagent, of a pentaethyl or a penta-isopropyl iminobis(methylenephosphono)
 undecanoate.

9. (Previously Presented) The process as claimed in claim 1, wherein use is made, as modifying reagent, of a pentaethyl or penta-isopropyl iminobis(methylenephosphono)caproate.

10. (Previously Presented) The process as claimed in claim 1, wherein the time which elapses during the synthesis period before the modifying reagent is added is directly proportional to a planned average size of the nanoparticles.

11. (Currently Amended) ~~Method of using of~~ The process as claimed in claim 1, ~~wherein the synthesis mixture comprises~~ compounds of the formula IV as ~~modifying reagent for preparing metal salt nanoparticles in accordance with the process as claimed in claim 1~~ solvent:



where

R has the meaning given above with regard to formula (I), and

Alk is a C₄-C₂₂-alkyl radical or C₇-C₃₀ aralkyl or arylalkyl radical.

12. (Currently Amended) Method of using the nanoparticles which are prepared as claimed in claim 1, comprising for coupling the nanoparticles to biologically relevant molecules for the purpose of marking them.

13. (Currently Amended) Method of using the nanoparticles which are prepared as claimed in claim 1 for a subsequent intended application, comprising coupling which requires the nanoparticles to be coupled to application-specific molecules, with the coupling being selectively promoted or made possible by means of one of the functional properties of the modifying reagent.

14. (Previously Presented) The process as claimed in claim 2, wherein doping elements are present in the host lattice at a concentration between 0.01 mol% and 30 mol%.

15. (Previously Presented) The process as claimed in claim 2, wherein doping elements are present in the host lattice at a concentration between 0.1 mol% and 20 mol%.

16. (Canceled)

17. (Canceled)